

undoubtedly postglacial; but he inclines to consider the lower brick-earth of the Thames valley, where the musk-sheep has been found at Crayford, as anterior to the Boulder-clay, which occupies the district to the north. This deposit at Trimmingham, however, is certainly preglacial; and so *Ovibos moschatus* belongs to a fauna which arrived in our country prior to the extreme refrigeration of climate which characterized the glacial epoch, and afterwards retreated northwards to its present haunts, showing, with other evidence, that this epoch did not form a hard-and-fast barrier between two faunas.

2. "On some New or imperfectly known Madreporaria from the Coral Rag and Portland Oolite of the Counties of Wilts, Oxford, Cambridge, and York." By R. F. Tomes, Esq., F.G.S.

The author, after pointing out the poverty of the British Corallian rocks in genera and species of corals as compared with the strata of equivalent age on the continent, proceeded to describe a section in the Middle Oolite at Highworth.

The author then described species of *Astroccenia*, *Dimorpharcea*, and *Latimæandrina*, genera not hitherto recognized in the British Corallian; and for one of the forms he has discovered he proposed a new genus, to which he gives the name of *Crateroseris*. The paper concluded with some remarks on the well-known *Isastræa oblonga* of the Portland beds.

BIBLIOGRAPHICAL NOTICES.

Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg.
7^e série, tome xxxi. No. 5. *Miscellanea Silurica* III. I. *Supplement** to the *Monograph of the Russian Leperditia*. II. *The Crustacean Fauna of the Eurypterus-beds of Rootziküll, Oesel.* By Magister FR. SCHMIDT, Fellow of the Academy. With 9 plates. 4to 1883.

IN 1873 M. Fr. Schmidt ("Miscellanea Silurica," I.) published a revision of the then-known *Leperditia* and *Isochilina*, and added several new species, with good illustrations. He figured and described:—

1. *Leperditia grandis*, Schrenck, pp. 9, 10, figs. 1, 3-6 a.
2. *L. Barbotana*, n. sp., pp. 9, 12, figs. 7-9 a.
3. *L. Tyraica*, n. sp., p. 9, figs. 2, 10-12.
4. *L. Angelini*, n. sp., pp. 9, 13, figs. 13-17. Var. *ornata*, Eichw., pp. 9, 14, fig. 18.
5. *L. baltica*, Hisinger, pp. 9, 15.

* "Nachtrag zur Monographie der russischen silurischen Leperditien," &c.

6. *L. Hisingeri*, n. sp., pp. 9, 16, figs. 22, 23.
7. *L. Eichwaldi*, n. sp., pp. 9, 12, figs. 19–21.
8. *L. wiluensis*, n. sp., pp. 10, 17, figs. 27–28 a.
9. *L. parallela*, n. sp., p. 18, figs. 24–26.
10. *L. marginata*, Keyserling, pp. 10, 19, figs. 29–31.
11. *L. Keyserlingi*, n. sp., pp. 10, 20, figs. 32–34.
12. *Isochilina biensis*, Grunewald, pp. 10, 21, fig. 35.
13. *I. punctata*, Eichwald, pp. 10, 22, figs. 36, 37.
14. *I. Maakii*, n. sp., pp. 10, 23, figs. 38, 39.

In the Supplement which the author now gives us he first refers to the letter "On some Silurian *Leperditia*" in the Ann. & Mag. Nat. Hist., March 1882, containing some critical remarks by himself on the *Leperditia* described and figured by T. Rupert Jones in the Ann. & Mag. Nat. Hist. of November 1881; and he intimates that with the continued study of the Russian *Leperditia* he has modified some of his views about the species and varieties then referred to. In this Supplement M. Schmidt first revises the Silurian species from the East-Baltic districts, and then treats of the East-Russian *Leperditia*—*L. marginata*, Keyserling, and *L. wiluensis*, Schmidt, both of which he more fully describes from new material. He also notices the Uralian *L. Barbotana*, Schm., a new Uralian variety of *L. grandis*, Schrenck, and a new species and variety from the Upper-Silurian or Hereynian stage of the South Ural; and from probably the same horizon in the Waigatsch Island he describes three new species and a variety, collected during Baron Norden-skjöld's Jenissei Expedition.

To show the results of M. F. Schmidt's late researches, it may be best to extract his corrected synonymy of the species he has now taken in hand. Thus:—

- P. 8. *Leperditia grandis*, Schrenck, 1873, in Schmidt's Russ. sil. Lep. p. 10, figs. 3–6; Kolmodin, 1879, Ostrac. sil. Gotl. p. 135; F. Schmidt and T. R. Jones, 1882, Ann. & Mag. Nat. Hist. March, p. 169.

Baltic Provinces; Gothland; North-German Drift.

- P. 9. *Leperditia phaseolus* (Hisinger).

Cytherina phaseolus, His., 1837, Leth. Suec. p. 9, pl. i. fig. 1.

Leperditia Angelini, F. Schmidt, 1873, Russ. sil. Lep. pp. 13–18 (with synonyms); Lundgren, 1874, "Om den vid Ramsåsa och Ofvedskloster i Skåne förekommande sandstenens ålder," Lund Univers. Årskrift, vol. x. p. 9.

Leperditia tyraica, Linnarson, 1875, Anteckning från en resa i Skånes silurtrakter in Geolog. föreningens förh. vol. ii. p. 280.

Leperditia Angelini, Krause, 1877, Zeitschr. d. deutsch. geol. Ges. vol. xxix. p. 29.

Leperditia phaseolus, Kolmodin, 1879, Ostrac. sil. Gotl. p. 134, pl. xix. figs. 4, 5.

Leperditia Hisingeri, var. *gracilentia*, Jones, Ann. & Mag. Nat. Hist. November 1881, p. 339, pl. xix. fig. 6.

Leperditia Hisingeri (dwarf form), Jones, 1881, *op. cit.* p. 340, pl. xix. fig. 16.

Leperditia phaseolus, var. *marginata*, Jones, 1881, *op. cit.* p. 341, pl. xix. fig. 15; F. Schmidt and T. R. Jones, *Ann. & Mag. Nat. Hist.* March 1882, pp. 170, 171.

Gothland; Schonen, Christianiafjord; England; Baltic Provinces.

Var. *ornata*, Eichw., is mentioned at p. 10.

P. 11. *Leperditia Eichwaldi*, F. Schmidt, pl. i. fig. 1; and 1873, *Russ. sil. Lep.* p. 17, figs. 19-21.

Oesel and North-German Drift.

P. 11. *Leperditia baltica*, Hisinger, pl. i. figs. 2, 3; F. Schmidt, 1873, *op. cit.* p. 15; Kolmodin, 1879, *op. cit.* p. 134; T. R. Jones, *Ann. & Mag. Nat. Hist.* Nov. 1881, p. 337, pl. xix. fig. 1 (?); Schmidt & Jones, *Ann. & Mag. Nat. Hist.* March 1882, p. 168.

Gothland; Malmö in Christianiafjord; North-German Drift; England(?).

Pp. 11, 12. Var. *contracta*, Jones, *Ann. & Mag. Nat. Hist.* Nov. 1881, p. 337, pl. xix. figs. 2, 3.

England.

P. 13. *Leperditia Keyserlingi*, Schmidt, 1873, *op. cit.* p. 20, figs. 32-34.

Leperditia Hisingeri, Jones, *Ann. & Mag. Nat. Hist.* Nov. 1881, p. 339, pl. xix. fig. 5 (?).

Leperditia Keyserlingi, Schmidt & Jones, *Ann. & Mag. Nat. Hist.* March 1882, pp. 170, 171.

Baltic Provinces; England.

P. 14. *Leperditia Hisingeri*, Schmidt, pl. i. figs. 5-7.

Leperditia Hisingeri, Schmidt, 1873, *Russ. sil. Lep.* p. 16 (partly), fig. 23.

Leperditia Schmidtii, Kolmodin, 1879, *op. cit.* p. 133.

Leperditia balthica, Jones, *Ann. & Mag. Nat. Hist.* Nov. 1881, p. 335, pl. xix. figs. 10, 11.

Leperditia Hisingeri, Schm. & Jones, *Ann. & Mag. Nat. Hist.* March 1882, p. 168.

Gothland, Malmö, Christianiafjord; Baltic Provinces.

Pp. 15, 16. *Leperditia Hisingeri*, var. *abbreviata*, Schmidt, 1883, pl. i. figs. 8-12.

Leperditia baltica, Eichw., 1860, *Leth. ross.*, anc. période, p. 1329 (partly).

Leperditia Hisingeri, F. Schmidt, 1873, *op. cit.* p. 16, fig. 22.

Leperditia balthica, var. *contracta*, Jones, *Ann. & Mag. Nat. Hist.* Nov. 1881 (partly), p. 338, pl. xix. fig. 13.

Baltic Provinces.

We gather that M. Schmidt's study of the *Leperditia* leads him to regard Mr. T. R. Jones's

Leperditia balthica, Ann. & Mag. Nat. Hist. Nov. 1881, p. 336, pl. xix. fig. 1, as doubtful: Suppl. p. 11.

Leperditia balthica, var. *contracta*, p. 337, pl. xix. figs. 2, 3, as good: Suppl. p. 12.

Leperditia balthica, p. 336, pl. xix. figs. 4 a, 4 b, as doubtful: Suppl. p. 11.

Leperditia Hisingeri (?), p. 339, pl. xix. fig. 5, as *L. Keyserlingi*: Suppl. p. 13.

Leperditia Hisingeri, var. *gracilentata*, p. 339, pl. xix. fig. 6, as *L. phaseolus*: Suppl. p. 9.

Leperditia balthica, pp. 335, 336, pl. xix. figs. 10, 11, as *L. Hisingeri*: Suppl. pp. 11 and 14.

Leperditia balthica, var. *contracta*, p. 338, pl. xix. fig. 13, as *L. Hisingeri*, var. *abbreviata*: Suppl. pp. 12 and 16.

Leperditia balthica, var. *contracta*, p. 338, pl. xix. fig. 14, as *L. tyraica*, on account of its locality: Suppl. p. 12.

Leperditia phaseolus, var. *marginata*, p. 341, pl. xix. fig. 15, as *L. phaseolus*: Suppl. p. 10.

Leperditia Hisingeri, dwarf var., pp. 340, 341, pl. xix. fig. 16, as *L. phaseolus*: Suppl. p. 10.

Leperditia balthica, var. *contracta*, p. 338, pl. xix. fig. 17, as doubtful: Suppl. p. 12.

At page 18 of his Supplement M. Schmidt describes a fresh *Leperditia marginata*, Keyserling, with its varieties *rotundata* and *subparallela*, from the Waschkina basin, figuring it in pl. i. figs. 13-19. It is the *Cypridina marginata*, Keyserling, 1846, Reise in Petschoraland, p. 288, pl. xi. figs. 16 a-d; *Leperditia marginata*, Schmidt, 1873, Russ. sil. Lep. p. 19, figs. 29-31; and Schm. & Jones, Ann. & Mag. Nat. Hist. March 1882, p. 171.

At page 21, *Leperditia Wiluensis*, Schmidt (1873, *op. cit.* p. 17, figs. 27, 28), is redescribed and figured, pl. i. figs. 20-22. It is from the watershed of the Wilui and Olenek in "East Siberia."

Leperditia Barbotana, Schm. 1873, Russ. sil. Lep. p. 12, figs. 7-9, is further treated of at pp. 22 and 87. It is from the banks of the Kaga, the Belaja, and the Juresenj, on the west side of the Southern Ural, and from the Upper-Silurian or Hercynian beds, passing up into the Devonian.

Leperditia Moelleri (and its variety *levigata*, p. 88), pp. 23 and 87, is a new species from the same district, and is figured in pl. i. figs. 23-25, and pl. v. a, figs. 23, 24.

A new variety (*uralensis*) of *L. grandis*, Schrenck, is given at p. 24 and p. 87, pl. i. figs. 26-28. It is from the bank of the Belaja, below Katschukowa. Some of the limestones of this district are almost wholly composed of *Leperditia*.

Specimens of a *Leperditia*-limestone, probably also of Upper Silurian age, were collected at Cape Grebenny, in the Waigatsch Island (off the Northern Ural) during Nordenskjöld's expedition to

the Jenissei in 1875; and these yielded the new forms, *Leperditia Nordenskjoeldi*, Schmidt, Suppl. p. 25, pl. i. figs. 29-32; *L. waigatschensis*, p. 27, pl. i. figs. 33 a-c; and *L. Lindströmi*, p. 85, pl. v. a, figs. 17-20, with its variety *mutica*, p. 86, pl. v. a, figs. 21, 22.

The second portion of this Part III. of the "Miscellanea Silurica" deals with the Crustacean Fauna of the *Eurypterus*-beds of Rootziküll in the island of Oesel, at the mouth of the Gulf of Riga, Baltic Provinces.

After some remarks (pp. 28-31) on the strata themselves, their fossil contents, and the results of their careful examination by himself and others, M. Schmidt treats of the HEMIASPIDÆ (pp. 31-34), with their history and characteristics, as shown in the three genera which he refers to this family, namely:—*Pseudoniscus*, Nieszkowski; *Hemiaspis*, H. Woodward; and *Bunodes*, Eichwald. The last genus is described with three species:—*B. lunula*, Eichw., p. 35, pl. i. figs. 34-38, and pl. vii. figs. 1-6; *B. Schrencki*, Nieszk. (*B. lunula*, var. *Schrencki*, Nieszk., in the explanation of plate i. and in the Contents), p. 38, pl. i. figs. 39-43; *B. rugosus*, Nieszk., p. 39, pl. i. figs. 44-47. *Pseudoniscus aculeatus*, Nieszk., is figured and described p. 40, pl. i. figs. 48, 49. The organization and systematic place of the Hemiaspids are treated at pp. 43-46.

The EURYPTERIDÆ and their relationships are discussed at pp. 46-48, and the genus *Eurypterus* described, with two species (*E. Fischeri*, Eichw., with its var. *rectangularis*, and *E. laticeps*), in detail, at pp. 48-64, pls. ii., iii., iii. a, and vi. figs. 6, 7. The history and structure of *Pterygotus* follow (pp. 64 &c.), with a detailed description and full illustration of *Pt. osiliensis*, sp. nov. (pp. 70 &c., pls. iv., v., v. a, figs. 1-16, pl. vi. figs. 1, 2, 3 (var. *laticauda*), 4, 5, and pl. vii. figs. 7, 8, 10, 11, and five woodcuts).

A few, but characteristic, specimens of a *Ceratiocaris* have also been discovered at Rootziküll, in Oesel (p. 83); and these, carefully figured by M. Schmidt in his pl. vi. fig. 8 (telson and two lateral cercopods), fig. 9 (telson spine), pl. vii. fig. 12 (left valve of a carapace), have been referred by him to a new species, *C. Nœllingi* (p. 84, with woodcut, fig. 5), which, as the author observes, is closely related to the English *C. leptodactylus*, M'Coy.

These two memoirs, so highly creditable to the Imperial Academy, as results of the palæontological research of one of its active members, have been written with care and exactitude, both as to the observation and collection of facts and the recognition and critical examination of the labours of other palæontologists. The printing is good, the woodcuts are neat, and the numerous and large plates are beautifully delicate, elaborate, and trustworthy.

Proceedings of the Bristol Naturalists' Society. New Series, vol. iv. part i. (1882-83). 8vo. 1883.

IN Natural History this Society has interested itself in many biological and physical subjects during the Session, as appears from the